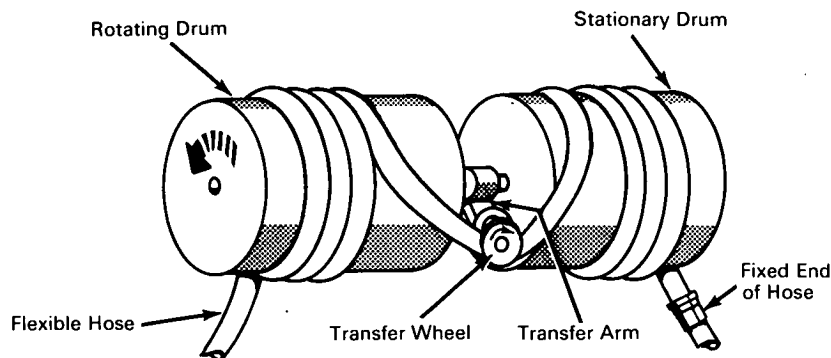


# NASA TECH BRIEF



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## Dispensing System Eliminates Torsion in Deployed Hoses



**The problem:** To deploy, reel in, and store flexible hose without creating torsional moments. A frequently used method of storing such a device with an attached end on a storage drum requires that the attached end be equipped with a rotary seal on the centerline so that it can revolve with the drum. This complicates the design and places limitations on the weight of material that can be handled.

**The solution:** A dispensing system that uses a rotating drum, transfer arm, and stationary drum to deploy, reel in, and store an attached hose. Rotating connections at the attached end are not required.

**How it's done:** The rotating drum winds or unwinds the hose, the stationary drum stores the hose, and the transfer arm regulates the movement of the hose between the rotating drum and the stationary drum. The transfer arm is normal to the axis of the two drums and revolves about the axis as the rotating drum turns. A transfer wheel, turning freely on the end of the transfer arm allows the hose to move smoothly past the arm. In the winding (storing) operation, the rotating drum and transfer arm move in a clockwise direction. As the rotating drum turns, it takes in the hose at one end. At the same time, the

transfer arm, rotating at a velocity designed to maintain proper hose tension, takes the hose from the opposite end of the rotating drum and wraps it onto the stationary drum for storage. In the unwind (deploying) operation, the rotating drum and transfer arm move in a counterclockwise direction.

### Notes:

1. This dispensing system eliminates torsion and minimizes strain and subsequent wear in the handling of flexible hose. It would be useful for handling flexible cables or conduit where one end must remain permanently attached to an outlet or connector.
2. Inquiries concerning this innovation may be directed to:

Technology Utilization Officer  
Manned Spacecraft Center  
P.O. Box 1537  
Houston, Texas, 77001  
Reference: B65-10185

**Patent status:** NASA encourages commercial use of this innovation. No patent action is contemplated.

Source: IIT Research Institute under contract to Manned Spacecraft Center (MSC-80)

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